	Unit Titles								
	Big Ideas	**Nursery**	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
B	1.What are living things and what are they made of?	Plants and animals	Our Natural World	Animals including humans Plants Wetlands Project Connecting with nature	Living things and Habitats	Animals including humans Plants		Living things and their habitats	Living things and their Habitats Animals including humans Evolution and inheritance
	2.How do living things grow and reproduce?	Plants and animals	Healthy Me	Wetlands Project Connecting with nature	Animals including humans Plants	Nutrition and Diet Plants		Animals including humans Living things and their habitats	Living things and their Habitats Animals including humans Evolution and inheritance
	3.How do living things live together in their environments?	Plants and animals	Seasons Our Natural World	Seasonal Changes Wetlands Project Connecting with nature	Living things and Habitats	Animals including humans	Animals including humans Living things and habitats		Living things and their Habitats Animals including humans Evolution & inheritance
	4.Why are there similarities and differences between living things?	Plants and animals	Our Natural World	Animals including humans Plants			Animals including humans Living things and habitats	Living things and their habitats	Living things and their Habitats Animals including humans Evolution and inheritance
	5.How do living things stay healthy?	Plants and animals	Healthy Me		Animals including humans	Animals including humans	Animals including humans		Living things and their Habitats

	Unit Titles								
	Big Ideas	**Nursery**	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		Healthy Me			Plants		Living things and habitats		Animals including humans
C	6.How do we explain how substances behave?		Our Natural World	Everyday Materials				Properties and changes of Materials	
	7.What are things made of?	Explore Materials	Our Natural World	Everyday Materials	Uses of everyday materials	Rocks	Materials	Properties and changes of Materials	
	8.How can substances be made and changed?		Our Natural World		Uses of everyday materials		Materials		
	9.How can we explain changes in the air, land, and oceans?					Rocks			
P	10.Why do materials have different properties?	Explore Materials		Everyday Materials	Uses of everyday materials	Rocks Light	Materials Sound	Properties and changes of Materials	Light
	11.How do forces make things happen?	Forces				Forces & Magnets		Forces	
	12.How do we see, hear, and communicate?	Senses	Senses	Seasonal Changes		Light	Sound Electricity		Electricity Light
	13.How do electricity and magnetism work?					Forces|& Magnets	Electricity		Electricity
	14.How does the Earth fit into the Universe?			Seasonal Changes				Earth & Space	

EYFS Curriculum: Science

Birth to three	Repeat actions that have an effect. Explore materials with different properties. Explore natural materials, indoors and outside. Explore and respond to different natural phenomena in their setting and on trips.
3 and 4-year-olds	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice. Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" Make healthy choices about food, drink, activity and toothbrushing.
Children in reception	Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different from the one in which they live. Understand the effect of changing seasons on the natural world around them. Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian
ELG	Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.

	Working Scientifically	*Asking Questions*	
EYFS	Shows curiosity about objects, events and people. Questions why things happen. Asks questions to clarify understanding and aspects of their familiar world e.g. place they live or natural world.		

	Working Scientifically	*Asking Questions*	
Y1	Explore the world around them and raise their own questions. (e.g growing, animals in their habitat, everyday materials.) Can answer questions supported by the teacher, often through scenarios and recognise questions can be answered in different ways. Can begin to ask simple questions and use simple secondary sources to find answers. Able to ask yes and no questions to sort and classify.		
Y2	Raise questions that help them become familiar with scientific processes (e.g life processes that are common to all living things, their local environment, materials) Can ask simple questions relevant to the topic. Can use a range of question stems. (e.g. Is a flame alive? Is a deciduous tree dead in winter? What makes the best habitat for a minibeast? Where in the school can we find something that is made of wood? Which animal belongs to which offspring? Do seeds grow quicker inside or out?) Know their questions can be answered in different ways. Use more than one secondary source to gather and present information clearly.		
Y3	Raise own questions about the world around them and why this happens the way they do (e.g. the role of the roots and stem in nutrition and support, or how rocks are formed) Recognise how and when to use secondary sources to answer questions that cannot be answered in practical science. Can write a range of questions relevant to the topic. Can answer questions posed by the teacher, independently or with support. Identify new questions from data. Can raise questions and carry out tests with support to find things out. Can carry out research using a small range of secondary sources.		
Y4	Can decide how to gather evidence to answer questions. Raise questions to help identify and group (such as how a habitat changes, animals and living things including plants). Can write a range of questions using the world around them and their own scientific knowledge. They recognise when secondary sources can be used to answer questions and can select appropriate information from sources.		
Y5	Can study and raise questions to answer (including about their local environment throughout the year). Can ask relevant questions and suggest reasons for similarities and differences. Use their scientific experiences to explore ideas and raise different questions. Can create further questions from enquiries to investigate. Independently uses secondary sources to find relevant facts about a topic. Raise further questions from enquiries/research.		
Y6	Can raise questions about local animals and how they are adapted to their environment. Can raise questions about a range of phenomena e.g., rainbows, colours on soap bubbles, objects looking bent in water. Can ask questions about a range of materials in order to support classification. Asks appropriate questions to group and classify.		

	Working Scientifically	*Asking Questions*	
	Can use secondary sources to research (e.g., unfamiliar animals and plants from a broad range of habitats). Use ideas from secondary sources to support their ideas. Can raise questions to further prove a scientific enquiry.		

	Working Scientifically	*Making Predictions*	
EYFS	Shows curiosity about objects, events and people. Questions why things happen.		

Y1	Can make basic predictions over things they can see or their own ideas. Can use some scientific vocabulary.
Y2	Draws on knowledge from observations to make a prediction. Can begin to test predictions and later answer questions (predictions can be a guess). Ask questions about what might happen in the future.
Y3	Uses evidence and subject knowledge to refute statements. Make predictions from questions posed. Makes further predictions from what is observed or tested.
Y4	Use subject knowledge or research to make predictions. Raise further predictions from results based on patterns. Make predictions for new values.
Y5	Use subject knowledge or research to make predictions. Raise further predictions from results based on patterns. Make predictions for new values.
Y6	Develops predictions not based on results of a scientific enquiry but using own ideas and subject knowledge. Use evidence to support predictions. Gathers evidence through practical science to support predictions. Use test result to make predictions to set up further comparative and fair tests.

	Working Scientifically	*Setting up tests*	
EYFS	Find ways to solve problems/find new ways to do things. Test out ideas. Take risks through trial and error. Engage in open ended activities. Choose the resources they need for their chosen activity from their environment.		
Y1	Begin to recognise different ways they may answer scientific questions. Experience different types of enquiry including practical activities. Use practical resources provided by the teacher and can suggest some resources of their own. Can carry out simple tests to classify, compare or pattern seek.		
Y2	Carry out simple comparative tests using own ideas (May use Discovery Dog model) Experience different types of enquiry including practical activities. Within the planning frame can suggest resources they may need for the test. Can carry out simple tests linked to the types of enquiry: observation, testing, pattern		

	Working Scientifically	*Setting up tests*	
	seeking, identifying and classifying and research.		
Y3	Perform a range of scientific investigations including different types of scientific enquiry. Set up practical enquiries: comparative, and fair tests. (post it note approach scaffolded by the teacher). Children investigate and answer own questions linked to shared post it note planning frame Understand there are different variables to be controlled. (Can identify some variables e.g. what was changed and what was kept the same) Follow basic instructions scaffolded by the teacher to conduct investigation. Use a range of equipment using thermometers and data loggers (with support).		
Y4	Can identify the type of enquiry needed to answer a question. Follow a plan to carry out observations and tests. Can select from a range of resources to gather evidence and answer questions, to classify, compare and perform fair tests. Use post it note planning approach with more independence in identifying variables and what needs measuring. Children choose their method to carry out the investigation.		
Y5	Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and changed. Can identify independent and dependent variables to identify causal relationships. Understand what type of scientific enquiry is needed to answer and prove/disprove scientific questions or phenomenon.		
Y6	Children choose the type of enquiry needed to carry out their investigation. Children can pose and answer their own questions, controlling variables where necessary independently. Decide whether they need to increase the sample size for validity. Children understand how to gather data to prove a prediction. Can identify a range of factors which may affect their investigation.		

	Working Scientifically	*Observing & Measuring*	
	Observing	***Measuring***	
EYFS	Explore the natural world making observations (e.g seasons) Explore different equipment and finding out what its uses are. Know similarities and differences between the natural world around them. Observe and describe what they see using everyday language.	Take measurements initially by comparisons then begin to use non-standard units. Make links and notice patterns in their experiences.	
Y1	Uses appropriate senses aided by equipment such as magnifying glasses and digital microscopes to make observations. With help and prompting, observe changes over time and can describe the changes. Can identify and group, compare and contrast using observations, video and photographs.	Use discrete e.g., counting and continuous data e.g. liquid to manageable common standard units. Can use simple measurements and equipment such as hand lenses and egg timers to gather data. Can use non-standard measures to compare.	
Y2	Observe closely, using simple equipment. Can identify a variety of plants and animals using observations. Observe how different plants grow and record findings including similar plants at different stages of growth and notice similarities and differences. Use their observations and ideas to suggest answers to questions. Observe through video, first-hand observations and measurement how different animals including humans grow and offer explanations. Compare objects based on observable features.	Use standard units to estimate and measure length, height, temperature, and capacity. Can use rulers, scales, thermometers and measuring vessels with some degree of accuracy. Make decisions about what measurements to use and how long to make them for.	

	Working Scientifically	*Observing & Measuring*	
	Observing	***Measuring***	
Y3	Make systematic and careful observations. Look for naturally occurring patterns and relationships. Collect data from their own observations and measurements. Closely observe stages of plant lifecycle over a period of time, noting patterns. Observe how water is transported in plants. Observe patterns in the way magnets behave in relation to each other. Can make observations and decide how to record them to answer a question.	Take accurate measurements using standard units, can measure and compare. (e.g., amount of liquid and height of a plant to nearest 1⁄2 cm) Use a range of equipment for measuring time, length, capacity and temperature. Begin to use a range of scales. Can read digital measurements from data loggers appropriately.	
Y4	Make systematic and careful observations to identify plants and animals in their habitats and how the habitat changes throughout the year. Use observations to ask questions and group objects using classification keys. Observe closely and describe processes such as changes of state. Observe and record evaporation over a period of time. Identify differences, similarities or changes related to simple scientific ideas or processes.	Uses a range of scales. Takes and records accurate measurements using standard units. Can record measurements to 2dp. Use thermometers to explore the effects of temperature on substances. Use data loggers to record sound in decibels and notice patterns. Use volt metres to measure voltage in a circuit to observe patterns and answer questions. Begin to gather repeat readings to increase accuracy.	
Y5	Observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world. Observe changes over a period of time. (e.g. animals) Make own decisions about what to observe.	Take repeat measurements where appropriate. Can choose the middle value or finds mean average. Select measuring equipment to give most precise results e.g., ruler, tape measure, trundle wheels, force metres with suitable scales. Can explain advantages and disadvantages of different measuring equipment. Children make quantitative measurements about conductivity and insulation.	
Y6	Children answer their own and others' questions on observations they have made. Their answers are based on evidence. Observe and raise questions about animals and how they are adapted to their environment. Observe properties of materials to group and classify based on their characteristics and properties.	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. When collecting measurements, the decide whether they need to increase sample size for validity and reliability. Can record measurements to 3dp. Can use protractors and rulers and force metres to measure accurately choosing correct units.	

	Working Scientifically		*Recording data*	
	Recording	***Tables***	***Sorting***	***Charts & Graphs***
EYFS	Draw pictures of objects in their own environment. Can take photos of things of interest to them.	Can count results. Start to mark make to record results.	Can order items. Can sort in more than 2 groups using familiar categories.	Can create a class chart using pictures and objects.
Y1	Begin to show accuracy in drawings and simple labels. Use key scientific vocabulary provided by the teacher.	Can complete a simple table of results. (Prepared) Can add marks to a chart to collect data.	Can using sorting rings to classify in more than 2 groups answering yes or no questions. Can sort using a simple 2 criteria Venn diagram.	Can complete a prepared block graph/pictogram.
Y2	The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. Record findings using scientific language. Gather and record data to help in answering questions.	Count results using a tally chart. Use prepared tables to record results.	Can identify and classify. Use simple keys based and yes or no questions. Can sort into 2 groups explaining their reasons clearly.	Can record using prepared vertical bar charts. Can use results from tally charts.
Y3	Record findings using scientific language, drawings and labelled diagrams.	Can complete a table (with given template) where they add headings and results.	Can use simple classification keys and Venn diagram with 2 sorting criteria and 1	Can produce vertical and horizontal bar charts adding own labels and bars.

	Working Scientifically		*Recording data*	
	Recording	***Tables***	***Sorting***	***Charts & Graphs***
			intersecting. Begin to use Carroll diagrams. Can give reasons for their sorting criteria.	
Y4	Record findings using systematic and careful observational drawings and labelled diagrams. Children supported to present the same data in different ways- choice over recording.	Can create own tables with own headings. Can convert between units of measure.	Can record using classification keys. Can use Venn and Carroll diagrams for classification, choosing own criteria.	Can use discrete and continuous data, presenting data in a line/scatter graph. Can construct a pictogram/bar chart independently.
Y5	Children decide how to record data from a choice of familiar approaches. Present results in a variety of ways to help in answering questions.	Can produce own results table indicating cause and effect. Records results systematically.	Use and develop classification keys and other information records to identify, classify and describe. Can classify in a number of ways.	Use line or scatter graphs to calculate range in a set of data. (Different scales used) Can produce bar graphs with various increments.
Y6	Children present the same data in different ways to help answering the question. Record data and results with increasing complexity e.g accuracy of measurements, multiple data sets and different scales. Use scientific diagrams and labels.	They can calculate the mean and range of a set of data. Use multiple data sets.	Can use and produce classification keys independently by posing questions.	Can independently collect data and produce scatter and line graphs using various scales and multiple data. Can create bar charts and pie charts to present data.

	Working Scientifically	***Interpreting & Communicating Results***	
EYFS	Offer explanations for why things happen- making use of some recently introduced scientific vocabulary. Develop own narrative and explain by connecting ideas or events. Develop vocabulary which meets the breadth of their experiences		
Y1	Can use evidence from simple tests when answering questions. With help begin to notice patterns and relationships. Talk about what they have found out and how they found it out. Can make comparisons and recognise biggest/smallest, most effective/least effective from data.		
Y2	Communicate findings to an audience using relevant scientific language and illustrations. Can identify casual relationships and patterns in results. Can identify which results do not fit the overall pattern and explain findings. Refers to the table of results when describing what has happened. Draws a basic conclusion (with support from the teacher) using own scientific knowledge, observations and comparisons. Uses results of investigations to answer enquiry questions.		
Y3	Begin to look for naturally occurring patterns and relationships from data. Draws conclusions based on observations. Can compare something using results and the conclusion is consistent with the data. Able to adjust opinion and predictions based on results. Can give reasons for results including any anomalies. Uses findings and results to answer questions raised. Use simple scientific language to discuss ideas and communicate their findings in ways appropriate for different audiences orally and written. Apply their knowledge of the topic when evaluating. Explain any amendments and how this impacted the investigation/test.		
Y4	Draws simple conclusions from results to answer questions and support their ideas. Look for casual relationships in data and identify evidence that refutes/supports ideas. Report on findings to an audience orally and in writing using appropriate scientific vocabulary for a range of audiences. Children use evidence to suggest values for different items tested using the same method. Draw conclusions based on straightforward evidence and current subject knowledge to support their findings, Suggest improvements and raise further questions.		

	Working Scientifically	*Interpreting & Communicating Results*	
Y5	Identify patterns and casual relationships that may be found in the natural environment. Children interpret data to generate simple comparative statements based on evidence. Use results to draw conclusions and can identify external factors that cannot be controlled e.g. temperature inside and outside. Use scientific language and illustrations to discuss, communicate and justify scientific ideas. Use results to make predictions and identify whether further observations, comparative tests, fair tests, pattern seeking, or research might be needed. Can use comparative statements to explain results and how things work. Evaluates how effectively variables were controlled.		
Y6	Look for patterns and relationships using a suitable sample. Use oral and written forms such as displays to report conclusions, casual relationships and give an explanation of the degree of trust in their results. Children can pose further questions which can be answered by extending the enquiry. Makes suggestions for ideas that can be explored using pattern seeking. Can spot anomalies and identify results that do not fit the overall pattern. Use data to refute or support ideas or arguments. Focuses on scientific reasons for overall pattern rather than a comparison. Uses labelled diagrams to support their explanation. Use ideas from secondary sources to support their ideas, choosing appropriate websites.		

	Working Scientifically	*Evaluating*	
EYFS	Develop own narrative and explanations by connecting ideas or events. Talk about what I have found and say what worked well. Describe how things work in simple terms and make basic alterations and suggest things that did not work (e.g. this button does not work so press this one) Questions why things happen. Children will come up with alternative ways of doing this through exploration. Children can say or indicate by smiley faces/scale if they have achieved the learning objective.		
Y1	With scaffolding and prompting can suggest improvements to their enquiries. Talk about some changes that could be made. Use simple success ladders to evaluate their tests or understanding against the learning objective.		
Y2	With support can suggest improvements to their enquiries. Suggest some things that could be changed and evaluate why things went wrong. Use success ladders with multiple criteria to evaluate the test or their understanding against the learning objective.		
Y3	Suggest improvements and raises further questions Uses evidence and subject knowledge to refute statements. Make suggest improvements from enquiries. Make basic statements about what worked well and what they would change. Use success ladders confidently to evaluate their tests or understanding against multiple criteria and suggest simple next steps.		
Y4	Evaluate and communicate their methods and findings. Suggest ways to improve what they have already done. Begin to evaluate different aspects of their enquiries such as equipment. Begin to understand how the enquiry improves outcomes from their questions. Use different charts to evaluate such as ranking scales, star diagrams and success ladders. Suggest points for development based on the weakest aspects.		
Y5	Evaluate and decide when further observations, comparative and fair tests might be needed. Evaluate different aspects of their enquiries such as equipment and accuracy of measurements. State how the enquiry improves outcomes from their questions. Children can relate their results to the question and state if their test has enabled them to answer it. Use a range of charts to evaluate such as ranking scales, star diagrams including those with negative numbers. Suggest next steps based on the weakest aspects and state how this will help them or the test progress or give different results.		
Y6	Children can describe and evaluate their own and other people's scientific ideas using evidence from a range of sources. Evaluate their choice of method, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources. Children use scientific language and evaluates how their enquiry has answered the question.		

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Plants		- identify & name a variety of common wild & garden plants, including deciduous & evergreen trees - identify & describe the basic structure of a variety of common flowering plants, including trees	- observe & describe how seeds & bulbs grow into mature plants - find out & describe how plants need water, light & a suitable temperature to grow & stay healthy	- identify & describe the functions of different parts of the flowering plants: roots, stem/trunk, leaves & flowers - explore the requirements of plants for life & growth (air, light, water, nutrients from soil, & room to grow) & how they vary from plant to plant - investigate the way in which water is transported within plants - explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation & seed dispersal			
Key Vocab		names of locally found wild plants names of locally found garden plants names of locally found flowering plants	seeds, bulbs, fully grown mature water, light, damp/wet/dry, dark/light, hot/warm/cool/cold temperature	Part, structure, role, function, leaf/leaves, flower, blossom, petal, fruit, berry, root, bulb, seed, trunk, branch, stem, bark, stalk, water, light,			

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
		names of locally found trees, deciduous & evergreen, leaf/leaves, flower, blossom, petal, fruit, berry, root, bulb, seed, trunk, branch, stem, bark, stalk, vegetable, names of flowers grown, names of vegetables grown	use comparatives e.g. hotter, grow/growth, healthy, shoot, seedling, germinate/germination wither/limp, die, dry/crispy, soil, earth	air, nutrients, soil, fertiliser, damp/wet/dry dark/light, hot/warm/cool/cold temperature, use comparatives e.g. hotter, grow/growth, healthy, transported, life cycle, pollination, seed formation, seed dispersal			
Animals including humans		- identify & name a variety of common animals including fish, amphibians, reptiles, birds & mammals - identify & name a variety of common animals that are carnivores, herbivores & omnivores - describe & compare the structure of a variety of common animals (fish, amphibians, reptiles, birds & mammals, including pets) - identify, name, draw & label the basic parts of the human body & say which part of the body is associated with each sense	- notice that animals, including humans, have offspring which grow into adults - find out about & describe the basic needs of animals, including humans, for survival (water, food & air) - describe the importance for humans of exercise, eating the right amounts of different types of food, & hygiene	- identify that animals, including humans, need the right types & amounts of nutrition, & that they cannot make their own food: they get nutrition from what they eat - identify that human & some other animals have skeletons & muscles for support, protection & movement	- describe the simple functions of the basic parts of the digestive system in humans - identify the different types of teeth in humans & their simple functions - construct & interpret a variety of food chains, identifying producers, predators & prey	- describe the changes as humans develop to old age	- identify & name the main parts of the human circulatory system, & describe the functions of the heart, blood vessels & blood - recognise the impact of diet, exercise, drugs & lifestyle on the way their bodies function - describe the ways in which nutrients & water are transported within animals, including humans
Key Vocab.		names of common animals fish, amphibians, reptiles, birds, mammals common animals which eat other animal, carnivores	offspring (reproduction), life cycles, babies, young, grow, change (develop), adults, older/younger, baby/toddler/child/teenager, basic needs,	nutrition, nutrients, food types, fruit, vegetable, bread, rice, potato, pasta, milk & dairy foods, high in fat/sugar/ meat, fish, egg, beans,	digestive system, nutrition, nutrients, mouth, teeth, canines, incisor, molar, pre-molar, saliva, tongue, rip, tear, chew, grind, cut, oesophagus	Human, development, baby, toddler, child, teenage, adult, puberty, gestation, length, mass, grows, growing, reproduction (reproduce) life cycle,	circulatory system, heart, blood, blood vessels, pumps, oxygen, carbon dioxide, lungs respiratory system, nutrients, water, diet, exercise, drugs, lifestyle

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
		common animals which eat plants, herbivores common animals which eat animals & plants, omnivores wild animals, pets, body, head, neck, arms elbows, legs, knees, face, ears, eyes, eyebrows, eye lashes, nose, hair, mouth, teeth, tongue, feet, toes, fingers, nails, ankle, calf, thigh, hips, waist, trunk, chest, shoulders, back, hands, wrist, tail, wing, claw, fin, scales, feathers, fur, beak senses, hear/hearing, see/seeing, smell/smelling, taste/tasting rough/smooth, describing textures bright/dim, describing light sources loud/quiet, describing sounds high/low, describing sounds repeating/continuous sound describing sounds	water, food air, breathing, survival, exercise, food types, fruit, vegetable, bread, rice, potato, pasta, milk & dairy, high in fat/sugar, meat, fish, egg, beans, hygiene, clean, wash, healthy, medicine, drugs	carbohydrates, proteins, vitamins & minerals, fat, dietary fibre, water, balanced diet, skeleton, muscles support, protection, movement, skull, ribs, spine/vertebra vertebrate/invertebrate, joints, sockets, bones, tendons	(gullet), stomach, small intestine, large intestine, rectum, anus, carnivore, herbivore, omnivore, producer, consumer, predator, prey, food chain		
Living things and their habitats			- explore & compare the differences between things that are living, dead, & things that have never been alive - identify that most living things live in		- recognise that living things can be grouped in a variety of ways - explore & use classification keys to help group, identify & name a variety of living	- describe the differences in the life cycles of a mammal, an amphibian, an insect & a bird - describe the life processed of	- describe hoe living things are classified into broad groups according to common observable characteristics & based on similarities & differences, including

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
			habitats to which they are suited & describe how different habitats provide for the basic needs of different kinds of animals & plants, & how they depend on each other - identify & name a variety of plants & animals in their habitats, including micro-habitats - describe how animals obtain their food from plants & other animals, using the idea of a simple food chain, & identify & name different sources of food.		things in their local & wider environment - recognise that environments can change & that this can sometimes pose dangers to living things	reproduction in some plants & animals	micro-organisms, plants & animals - give reasons for classifying plants & animals based on specific characteristics
Key Vocab.			living, dead, never been alive, life processes, move, grow, feed, have offspring/young/babies reproduce, name local habitats, pond, woodland, meadow, seashore, woodland, ocean, rainforest, name micro-habitats, under log, on stony path, under bushes, condition), damp/wet/dry, dark/light, hot/warm/cool/cold, use comparatives e.g. hotter, suited/suitable, basic needs, depend, food, food chain, sources of food, shelter		classification keys, environment, fish, amphibians, reptiles, birds, mammals, vertebrates, name some vertebrates, invertebrate, name some invertebrates, human impact, name positive & negative human impacts	life cycle, reproduction, sexual, asexual, mammal, amphibian, insect, bird, fish, reptile, eggs, live young	organism, micro-organism, fungus, mushrooms, classification keys, environment, fish, amphibians, reptiles, birds, mammals, vertebrates, invertebrates, arachnid, mollusc, insect, crustacean

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Seasonal changes		- observe changes across the four seasons - observe & describe weather associated with the seasons & how day length varies					
Key Vocab.		season, spring, summer, autumn, winter, weather, hot/warm, cool/cold, sun/sunny, cloud/cloudy, wind/windy, rain/rainy, snow/snowing, hail/hailing, sleet, frost fog/mist, ice/icy, rainbow, thunder, lightning, storm, light/dark, day/night day length					
Evolution & inheritance							- recognise that living things have changed over time & that fossils provide information about living things that inhabited the Earth millions of years ago - recognise that living things produce offspring of the same kind, but normally offspring vary & are not identical to their parents - identify how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution
Key Vocab.							evolution, suited/suitable,

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
							environment, suited, adapted/adaptation, offspring reproduction, characteristics, vary/variation, inherit/inheritance, fossils
Materials & Their Properties		- distinguish between an object & material from which it is made - identify & name a variety of everyday materials, including wood, plastic, glass, metal, water & rock - describe the simple physical properties of a variety of everyday materials - compare & group together a variety of everyday materials on the basis of their simple physical properties	- identify & compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper & cardboard for particular uses - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting & stretching.		- compare & group materials together, according to whether they are solids, liquids or gases - observe that some materials change state when they are heated or cooled, & measure or research the temperature at which this happens in degrees Celsius - identify the part played by evaporation & condensation in the water cycle & associate the rate of evaporation with temperature	- compare & group together everday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical & thermal), & response to magnets - know that some materials will dissolve in liquid to form a solution, & describe how to recover a substance from a solution - use knowledge of solids, liquids & gases to decide how mixtures might be separated, including through filtering, sieving & evaporating - give reasons, based on evidence from comparative & fair tests, for the particular uses of everyday materials, including metals, wood & plastic demonstrate that dissolving, mixing & changes of state are reversible changes	

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
						- explain that some changes result in the formation of new materials, & that this kind of change is not usually reversible, including changes associated with burning & the action of acid on bicarbonate of soda	
Key Vocab.		object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil, card/cardboard, rubber, wool, clay, (properties), hard, soft, stretchy, stiff, bendy/floppy, waterproof, absorbent, breaks/tears, rought, smooth, shiny, dull, see through, not see through natural/manufactured/ manmade/synthetic – if being used	suitable/unsuitable, suitability, use/useful, purpose, object, material, property, characteristics, wood, plastic, glass, metal, rock, brick, paper, fabrics, elastic, foil, cardboard, rubber, wool, clary, hard, soft, stretchy, rigid, flexible, waterproof, absorbent, strong/weak, rough, smooth, reflective, non-refelctive, transparent, opaque, translucent, shape, changed, push/pushing, pull/pulling, twist/twisting, squah/squahing, bend/bending, stretch/stretching, pinch/pinching, poke/poking, roll/rolling, squeeze, squeezing, natural/manufactured/ manmade/synthetic – if being used		states of matter, solid, liquid, gas, powder, grain/granular, crystals, change state, ice/water/steam, water vapour, heated/heating, given energy, cooled/cooling, temperature, degrees celsuis, melt, freeze, solidify, melting point, molten, boil, boiling point, evaporate/evaporation, condense/condensatio n, water cycle, precipitation, transpiration	hard, soft, stretchy, rigid, flexible, waterproof, absorbent, natural/manufactured/ manmade/synthetic, strong/weak, rough, smooth, reflective, non-flective, transparent, opaque, translucent, solubility, electrical conductivity, thermal conductivity, melting, dissolve, solution, insoluble, solute, solvent, particle, mix/mixture, filtering, sieving, evaporating, condensing, reversible changes, new materials, not usually reversible, burning, gas given off, rusting,	
Rocks				- compare & group together different kinds			

Substantive Knowledge							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
				of rocks on the basis of their appearance & simple physical properties - describe in simple terms how fossils are formed when things that have lived are trapped within rock - recognise that soils are made from rocks & organic matter			
Key Vocab.				rock, stone, pebble, boulder, soil, fossils, grains, crystals, hard/soft, texture, absorb water, porous, let water through permeable/impermeable, marble,chalk, granite, sandstone, slate, sandy soil, clay soil, chalky soil, peat,			
Earth& space						- describe the movement of the Earth, & other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth - describe the Sun, Earth & Moon as approximate spherical bodies - use the idea of the Earth's rotation to explain day & night & the apparent movement of the sun across the sky	

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Key Vocab.						Earth, planets, Sun, solar system, Moon, celestial body, sphere/spherical, rotate/rotation, spin, night & day, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, dwarf planet, orbit, revolve, geocentric model, heliocentric model, shadow clocks, sundials, astronomical clocks	
Light				- recognise that they need light in order to see things & that dark is the absence of light - notice that light is reflected from surfaces - recognise that light from the sun can be dangerous & that there are ways to protect their eyes - recognise that shadows are formed when the light from a light source is blocked by a solid object - find patterns in the way that the size of shadows change			- recognise that light appears to travel in straight lines - use the idea that light travels in straight lines to explain that objects are seen because the give out or reflect light into the eye - explain that we see things because light travels from light sources to our eyes or from light sources to objects & then to our eyes - use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Key Vocab.				light, light source, names of light sources, dark/darkness, reflect, reflective, mirror, shadow, block, direct/direction, transparent, opaque, translucent			light, light source, names of light sources, dark/darkness, reflect, reflective, mirror, shadow, block, absorb, direct/direction, transparent, opaque, translucent
Sound					-identify how sounds are made, associating some of them with something vibrating -recognise that vibrations from sounds travel through a medium to the ear -find patterns between the pitch of a sound and the strength of the vibrations that produced it -recognise that sounds get fainter as the distance from the sound increases		
Key Vocab.					(sound, sound source, noise, vibrate/vibration, travel, sold, liquid, gas, medium, pitch, tune, high, low, volume, loud, quiet, fainter, muffle, strength of vibrations, insulation, instrument, percussion, strings, brass, woodwind, tuned instrument		

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Forces & magnets				- compare how things move on different surfaces - notice that some forces need contact between objects, but magnetic forces can act at a distance - observe how magnets attract or repel each other & attract some materials & not others - compare & group together a variety of everyday materials on the basis of whether that are attracted to a magnet, & identify some magnetic materials - describe magnets as having two poles - predict whether two magnets will attract or repel each other, depending on which poles are facing		- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the earth & the falling object - identify the effects of air resistance, water resistance & friction, that act between moving surfaces - recognise that some mechanism, including levers, pulleys & gears, allow a smaller force to have a greater effect	
Key Vocab.				force, push/pushing, pull/pulling, contact force, non contact force, magnetic force, magnet strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, non magnetic		fall, Earth, gravity, air resistance, water resistance, friction, moving surfaces, mechanisms, levers, pulleys, gears, force, transfers	

Substantive Knowledge							
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
				material, poles, north pole, south pole			
Electricity					- identify common appliances that run on electricity - construct a simple series electrical circuit, identifying & naming its basic parts, including cells, wires, bulbs, switches & buzzers - identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery - recognise that a switch opens & closes a circuit & associate this with whether or not a lamp lights in a simple series circuit - recognise some common conductors & insulators, & associate metals with being good conductors		- associate the brightness of a lamp or the volume of a buzzer with the number & voltage of cells used in the circuit - compare & give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers & the on/off position of switches use recognised symbols when representing a simple circuit in a diagram
Key Vocab.					electricity, appliances/device, mains, plug, electrical circuit, series circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive/negative, terminal, connect/connection, short circuit, wire,		electricity, appliances/device, electrical circuit, series circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive/negative, terminal, connect/connection, loose connection, short

Substantive Knowledge							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
					crocodile clip, bulb, bright/dim, switch, buzzer, motor, fast(er)/slow(er), conductor, insulator, metal/non metal		circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, volume, motor, fast(er)/slow(er), conductor, insulator, metal/non metal, voltage, current, resistance